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10/815,791

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Cristian M. Neculescu

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PATENT GROUP GA030-43  
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EXAMINER

WOLLSCHLAGER, JEFFREY MICHAEL

ART UNIT

PAPER NUMBER

1732

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/815,791

Applicant(s)

NECULESCU ET AL.

Examiner

Jeff Wollschlager

Art Unit

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 87-95, 98 and 100-109 is/are pending in the application.
- 4a) Of the above claim(s) 87-95 and 109 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 98 and 100-108 is/are rejected.
- 7) ☒ Claim(s) 98 and 100-108 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

It is noted for the record that Examiner Wollschlager has assumed responsibility for this application from Examiner Eashoo.

#### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 9, 2006 has been entered.

#### ***Claim Objections***

Claim 98 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The examiner notes that claim 98 recites mica. However, mica is already required in the claim from which claim 98 depends, claim 108.

Claim 98 and 100-108 are objected to for the following informalities: The recitation "thermoforming the sheet at least about 265 °F" would be more readable if presented as "thermoforming the sheet at a temperature of at least about 265 °F". Appropriate correction is required.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 98 and 100-108 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of US Pat. 6,719,943 in view of Huang (US Pat. 5,439,628) and Nakazima (US Pat. 5,001,176).

Although the claims are not identical, claims 1-21 of U.S. Patent No. US Pat. 6,719,943 substantially teach: vacuum thermoforming; a mica filled polypropylene sheet which forms a micronodular surface on the surface not in contact with a mold surface; wherein the container material has excellent chemical and mechanical resistance; admixed pigment and coupling agent; and a processing temperature of about 260°F.

Claims 1-21 of U.S. Patent No. US Pat. 6,719,943 do not teach a silane coupling

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agent. However, Nakazima teaches a silane coupling agent (4:35-65). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a silane coupling agent, as taught by Nakazima, in the claimed process of U.S. Patent No. US Pat. 6,719,943, since Nakazima suggests that such coupling agent improve the bonding between inorganic fillers such as mica and polyolefins such as polypropylene.

Claims 1-21 of US Pat. 6,719,943 do not teach titanium dioxide or a polyvinylidene fluoride processing aid. However, Huang teaches a pre-blended/admixed titanium dioxide (example 1) and a polyvinylidene fluoride processing aid (7:1-22). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a pre-blended/admixed titanium dioxide (example 1) and a polyvinylidene fluoride processing aid, as taught by Huang in the claimed process of U.S. Patent No. US Pat. 6,719,943, since Huang suggests that such pigment yields a desired article color and that the processing aid improves mold release.

Claims 98 and 100-108 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 of U.S. Patent No. US Pat. 6,403,936 in view of Huang (US Pat. 5,439,628), Young (Introduction to Polymers, pgs. 196, 204) and Nakazima (US Pat. 5,001,176).

Although the claims are not identical, claims 1-11 of US Pat. 6,403,936 substantially teach: thermoforming; a mica filled polypropylene sheet which forms a micronodular surface on the surface not in contact with a mold surface; and wherein the container material has excellent chemical and mechanical resistance.

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Claims 1-11 of U.S. Patent No. 6,403,936 do not teach a silane coupling agent. However, Nakazima teaches a silane coupling agent (4:35-65). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a silane coupling agent, as taught by Nakazima, in the claimed process of U.S. Patent No. US Pat. 6,403,936, since Nakazima suggests that such coupling agent improve the bonding between inorganic fillers such as mica and polyolefins such as polypropylene.

Claims 1-11 of U.S. Patent No. 6,403,936 do not teach titanium dioxide or a polyvinylidene fluoride processing aid. However, Huang teaches a pre-blended/admixed titanium dioxide (example 1) and a polyvinylidene fluoride processing aid (7:1-22): At the time of invention a person of ordinary skill in the art would have found it obvious to have used a pre-blended/admixed titanium dioxide (example 1) and a polyvinylidene fluoride processing aid, as taught by Huang in the claimed process of U.S. Patent No. US Pat. 6,403,936, since Huang suggests that such pigment yields a desired article color and that the processing aid improves mold release.

Claims 1-11 of U.S. Patent No. 6,403,936 do not teach vacuum thermoforming at a temperature of at least about 265°F. However, Young teaches that the melting point of polypropylene is about 368°F or 460K and a glass transition or softening point of about -10°F or 250K (pgs. 196, 204). Official Notice is given that vacuum thermoforming is well known in the molding art. At the time of invention a person of ordinary skill in the art would have found it obvious, if not implicit, to have used a vacuum thermoforming temperature in the range between the

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softening point and melting and optimized the processing conditions through routine experimentation, as commonly practiced in the art, in the claimed process of U.S. Patent No. US Pat. 6,403,936, and would have been motivated to do so in order to form a container a having desirable and texture.

Claims 98 and 100-108 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 48-61 of U.S. Patent No. US Pat. 6,100,512 in view of Huang (US Pat. 5,439,628), Young (Introduction to Polymers, pgs. 196, 204) and Nakazima (US Pat. 5,001,176).

Although the claims are not identical, claims 48-61 of U.S. Patent No. US Pat. 6,100,512 substantially teach: vacuum thermoforming; a mica filled polypropylene sheet which forms a micronodular surface on the surface not in contact with a mold surface; wherein the container material has excellent chemical and mechanical resistance; and titanium dioxide.

Claims 48-61 of US Pat. 6,100,512 do not teach a silane coupling agent. However, Nakazima teaches a silane coupling agent (4:35-65). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a silane coupling agent, as taught by Nakazima, in the claimed process of U.S. Patent No. US Pat. 6,100,512, since Nakazima suggests that such coupling agent improve the bonding between inorganic fillers such as mica and polyolefins such as polypropylene.

Claims 48-61 of U.S. Patent No. 6,100,512 do not teach a polyvinylidene

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fluoride processing aid. However, Huang teaches a polyvinylidene fluoride processing aid (7:1-22). At the time of invention a person of ordinary skill in the art would have found it obvious to have used a polyvinylidene fluoride processing aid, as taught by Huang in the claimed process of US Pat. 6,100,512, since Huang suggests that such processing aid improves mold release.

Claims 48-61 of U.S. Patent No. US Pat. 6,100,512 do not teach vacuum thermoforming at a temperature of at least about 265°F. However, Young teaches that the melting point of polypropylene is about 368°F or 460K and a glass transition or softening point of about -10°F or 250K (pgs. 196, 204). At the time of invention a person of ordinary skill in the art would have found it obvious, if not implicit, to have used a vacuum thermoforming temperature in the range between the softening point and melting and optimized the processing conditions through routine experimentation, as commonly practiced in the art, in the claimed process of U.S. Patent No. US Pat. 6,100,512, and would have been motivated to do so in order to form a container a having desirable and texture.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 98, 100-103 and 105-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (US 5,439,628) in view of Mitsuno et al. (EP 0 243 206) and any one of Young (Introduction to Polymers, pages 196, 204) or Watkins et al. (US 5,514,315) or (Kojimoto et al. US 4,248,651).

Regarding claims 98 and 108, Huang teaches the basic claimed process comprising thermoforming (col. 8, lines 1-5) a filled polypropylene sheet to produce a container wherein the container has a rough/coarse surface because of the filler particles effusing from the surface (col. 7, line 35- col. 8, line 5 and col. 6, lines 25-30). The filled sheet is extruded and calendered prior to the additional processing step of forming the articles, such as forming containers by thermoforming (col. 8, lines 53-62). Huang discloses mica as a suitable filler in a short list of fillers, but only exemplifies talc or calcium carbonate (col. 6, lines 24-45).

However, Mitsuno et al. disclose a polypropylene (page 3, lines 7-10) filled composition which provides improved properties (page 2, lines 48-51) wherein talc

and/or mica alone or together are the employed fillers (page 3, lines 54-61) and the composition is used in various molding applications (col. 4, lines 52-55). Further, Mitsuno et al. appear to show their best physical property results, such as heat deformation temperature and adhesive strength, when employing mica and talc together (examples 19-22; Table 5).

Additionally, Huang does not disclose the temperature at which thermoforming is performed. However, Young teaches the melting point of polypropylene is about 368 °F and the glass transition temperature is about -10 °F; Watkins et al. disclose thermoforming a polypropylene sheet at about 340 °F (col. 3, lines 12-15); and Kojimoto et al. disclose thermoforming a polypropylene composite at about 150 °C/302 °F (col. 3, lines 35-48; col. 4, lines 29-41).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed mica as a filler in the method disclosed by Huang, as suggested by Mitsuno, for the purpose of producing a desired product with improved physical properties. It is further noted that Mitsuno et al., in addition to Huang, suggest that mica and talc are equivalent fillers suitable for the same purpose.

Further, it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have optimized the thermoforming temperature to a temperature between the glass transition temperature and the melting point as is implicit in the term "thermoform" itself and as is demonstrated by each of Watkins et al. and Kojimoto et al. in their polypropylene thermoforming processes.

Finally, the examiner notes that the combination does not expressly teach the container has all the same claimed physical properties and effects. However, the combination teaches all claimed process steps, and employs all the claimed materials in the same claimed manner. As such, the claimed physical properties and effects are necessarily realized.

As to claims 100 and 101, Huang discloses thermoforming (col. 8, lines 1-5) in general and Watkins et al. disclose a female vacuum forming method (Figure 3; col. 3, lines 14-49).

As to claims 102, 103 and 105-107, Huang employs pre-blended/admixed titanium dioxide (Example 1) and polyvinylidene fluoride processing aids (col. 7, lines 1-22).

Claim 104 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (US 5,439,628) in view of Mitsuno et al. (EP 0 243 206) and any one of Young (Introduction to Polymers, pages 196, 204) or Watkins et al. (US 5,514,315) or (Kojimoto et al. US 4,248,651), as applied to claims 98, 100-103 and 105-108 above, and further in view of Nakazima (US 5,001,176).

Regarding claim 104, Huang teaches the basic claimed process as set forth above. Huang does not teach a silane coupling agent. However, Nakazima teaches a silane coupling agent (col. 4, lines 35-65).

Therefore it would have been *prima facie* obvious to one having ordinary skill in the art at the time of the claimed invention to have employed a silane coupling agent, as

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suggested by Nakazima in the process of Huang, since Nakazima suggests that such a coupling agent improves the bond between inorganic fillers such as mica and polyolefins such as polypropylene.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Wollschlager whose telephone number is 571-272-8937. The examiner can normally be reached on Monday - Thursday 7:00 - 4:45, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JW

Jeff Wollschlager  
Examiner  
Art Unit 1732

May 5, 2007

  
CHRISTINA JOHNSON  
SUPERVISORY PATENT EXAMINER  
5/11/07